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ABSTRACT

The Simi Star Project, a collaborative grant among six southern California school districts (Simi Valley, Ventura, Oxnard, Santa Barbara, Orcutt, and Point Hueneme) and IBM, tested the effectiveness of computers in the classroom and the effects of integrating technology into the curriculum. Six networked computers were placed in kindergarten and first grade classrooms to test integration of technology and to measure the effect on the students' reading and writing development. A qualitative study was developed to examine these classrooms. The software used was Writing To Read, Stories and More, Children's Writing and Publishing. Teachers were carefully trained, parents were informed as partners, and students were given daily access to the computers for writing their own language experience stories. The students were also given phonemic awareness and systematic phonics support. Researchers used observations, interviews, questionnaires, portfolio assessment, as well as reading attitude tests to measure the students' writing and reading development. The experimental classrooms were compared to control classrooms without computers but with a similar teaching approach. Results revealed that, based on a holistic evaluation, all students using Writing To Read averaged at least two writing levels higher than those in the control classrooms. The experimental group had a significantly higher positive reading attitude score than the control group. In the classrooms, computers were busy all day with diverse activities. For example, one fifth grade class worked on a project about world environment online with a fifth grade class in Paris. Every class needs computers, trained teachers, and a risk-free learning environment. (Contains a figure and 10 references.) (NKA)

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The Path to Literacy: Empowering Students in Your Classroom.

By

Jean M. Casey

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The Path to Literacy: Empowering Students in Your Classroom

Dr. Jean M. Casey

"Imaginative progressive teachers who had computers in the classrooms and were prepared to give students the time and support to learn often created wonderfully fertile learning environments--children can learn to use computers in a masterful way; learning to use computers can change the way they learn everything else." (Seymour Papert,1993, Mindstorms)

The first question administrators, teachers and parents ask is, "Will computers make a difference in the learning that occurs in the classroom? Past studies failed to answer this question or answered it negatively because they used standardized reading test scores as their only measure. The Simi Star Project, a collaborative grant between six school districts and IBM tested the effectiveness of computers in the classroom and effects of integrating technology into the curriculum. As a University researcher and reading professor, I was asked to be the evaluator of the Simi Star Project. It resulted from a grant between IBM and Simi Valley, Ventura, Oxnard, Santa Barbara, Orcutt and Point Hueneme school districts all located in Southern California. Six networked computers were placed in 24 kindergarten and first grade classrooms to test integration of technology in the curriculum and measure the effect on writing and reading development of the students. I worked with a team of educators and developed a qualitative study to examine these classrooms. The software used in the study was Writing to Read, Stories and More, Children's Writing and Publishing. The teachers were carefully trained,

parents were informed as partners, students were given daily access to the computers for writing their own language experience stories. The students also were given phonemic awareness and systematic phonics support. The researchers used observations, interviews, questionnaires, portfolio assessment as well as reading attitude tests to measure the students writing and reading development. The experimental classrooms were compared to control classrooms without computers but a similar approach to teaching. The results were significant. All students in the experimental classrooms using Writing to Read, averaged at least two writing levels higher based on a holistic evaluation than those in the control classrooms. The experimental group had a significantly higher positive reading attitude score than the control group. (Casey 1997) Teachers and parents all rated this program excellent on a 5 point rating scale.

These classrooms became writing, reading and publishing labs; the teachers kept samples of the children's daily writing in portfolios that were used as assessment and in parent conferencing.

That was just the beginning. One computer in each room was connected to the Internet and children chose pen pals from other states and Europe. One kindergarten child proudly wrote his daily message to his friend in Alaska. A fifth grade classroom was working on a project about the world environment online with a fifth grade classroom in Paris, France. Children were not only experiencing the meaningful use of writing and reading, but developing life long friendships and understanding of children like them all over the world.

The teachers quickly were caught up in the enthusiasm they saw in their student writers. They produced more communications and newsletters for their parents than

teachers in the control classroom were able to do; they also designed lessons and modeled stories that they wrote specifically on the computer and shared on the projection monitor with their students. Teachers became hooked on E-mailing each other, finding lesson ideas on the Internet, asking questions of the university people pertaining to certain theories and ideas. The teachers spent time reflecting on their teaching with the university researcher and also building a community of support with their peer teachers in the project.

The 6 computers were busy all day. When the language arts block was over and children had written their own stories, it was time to use the computers with HyperStudio, a software authoring program for children to design their own multi-media research reports

in science and social studies. Math, art, graph making was all a part of the daily curriculum, there never was a empty seat in front of a computer. Children received 90% more time using computers then those who visit a lab once a week for an hour.

The teachers also discovered that the daily writing of their students offered the best assessment possible of the skills the child had already mastered and those that were needed.

Look at Brandon's work in the figure below. He is a first grade student. Without the computer, based on his immature drawing, a teacher would conclude (using Gesell Developmental Scales) that he was at a 3 year old maturity level. He would be mislabeled and misplaced. But given the use of the computer we can see that Brandon has the phonemic awareness skills, sentence structure, punctuation and story sense of a six year old or older. How many students have we misjudged in the past based only on

their underdeveloped motor coordination with a pencil. Giving them a new tool, unlocks the intelligence they have and allows them to express it for all to see.

Insert Fig 1 diagram here

At What Grade Level Should We Have Computers in the Classroom?

Some administrators and parents might think that high school is the time to start computer use, some third grade. As the evaluator of the Simi Star Project, reading one thousand writing samples from five and six year olds was enlightening and taught me a valuable lesson. These young children could write much more than we ever imagined that children that age were capable of doing. It proved that they had many more ideas than they had been able to express with pencil and paper.

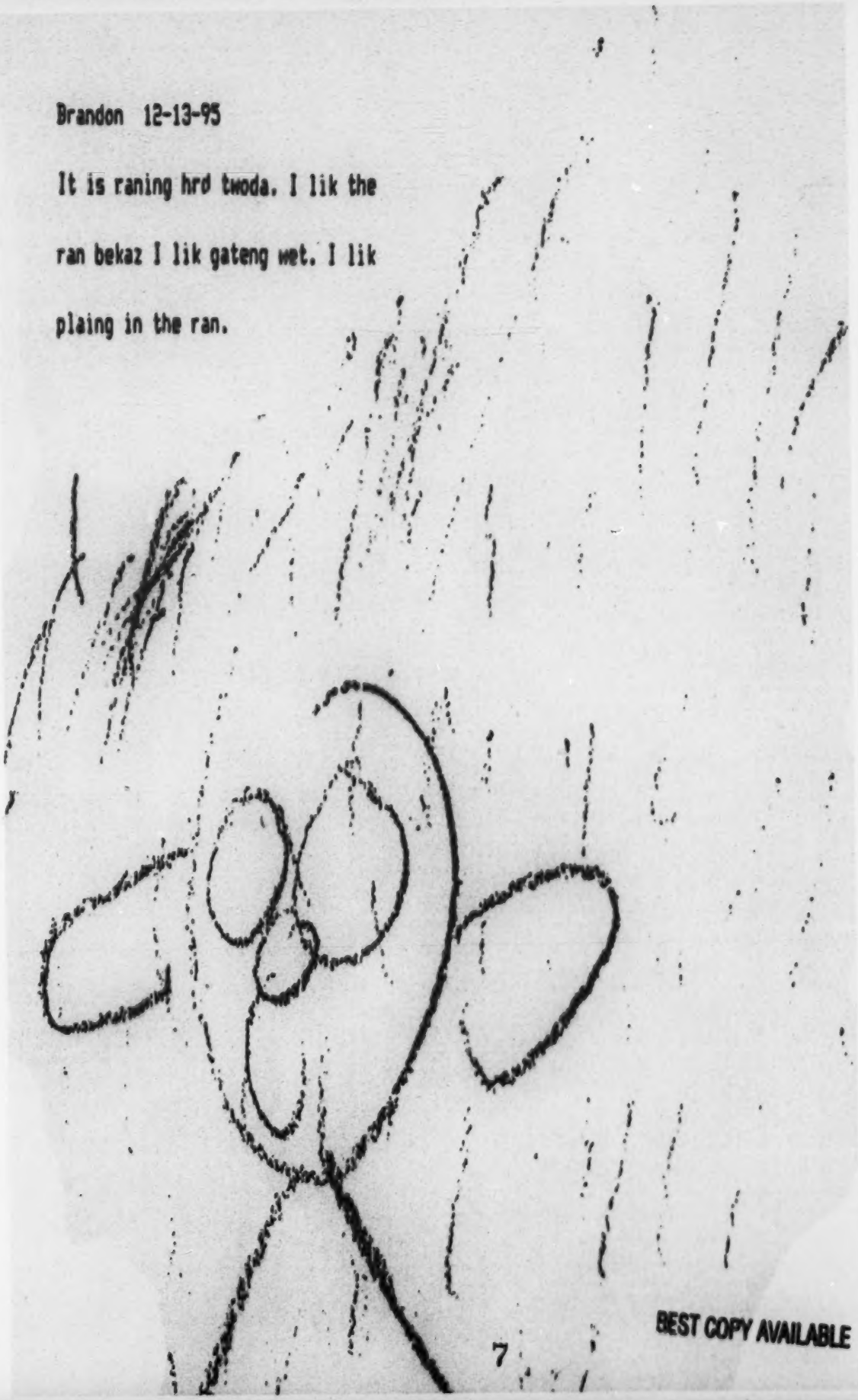
The time to have computers in the classroom is the first day children enter school. The computer is a sophisticated writing tool that gives the student auditory feedback, a visual display and control of their learning. A tool that can allow any student to feel like an author on the first day of school!

When I taught first grade twenty years ago and a child entered the classroom and said, "Teacher when will I learn to read?" We had to say not until you have mastered the three hundred fifty skills on our district reading scope and sequence chart. The first one is consonant b, there are three hundred forty nine more. The discouraged child went back to his seat.

Today when a child enters kindergarten and says, "When will I learn to read?" The professional teacher says, "Today!" Using KidWorks Deluxe (Knowledge

Brandon 12-13-95

It is raning hrd twoda. I lik the ran bekaz I lik gateng wet. I lik plaing in the ran.



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Adventure) the talking word processor, a child can sit down write his name, mom's name, his dog's name, letters of the alphabet, whatever he wants to write. He prints it out and has immediate proof of his literacy and authorship. He can take home his printed piece that very day and have it posted on the refrigerator for all to see, he can write, he can read!

Another important aspect in integration of computers into the curriculum is meeting the needs of the mainstreamed students. Some are students who in the past, because they had not yet developed adequate motor coordination were often mislabeled learning disabled, dyslexic, or attention deficit disorder (A.D.D.) The computer really is essential for changing the lives of these children. The following stories are about two of the many children I worked with using the talking word processor.

Dyslexic Nicholas: The heavy label

Nicholas taught me the next lesson. He was coming to the remedial reading clinic at the university. He was flunking his subjects at school, his parents were frantic. I trained the reading clinicians and then they worked weekly one hour a week with the children labeled "remedial readers." Rose was Nicholas's tutor and she came to me distressed. She felt she had been trying all the ideas we spoke about in class but they were not working with Nicholas. I agreed to work with him at the next session and Rose would observe through the two way mirrors. The next week I was waiting for Nicholas, when he arrived I told him I would be his tutor for this one session and asked him to tell me about himself. He said, "My name is Nicholas and I am twelve years old." "When I

was six they told me that I have dyslexia and would never learn to read and I have not ever learned." "I not only cannot read, I get an F in handwriting and math." He couldn't understand it because he liked math. He was good at it and knew all the answers through mental calculation and could respond with them orally. However, the teacher insisted on written responses on timed tests. This approach made Nick nervous and with his poor handwriting he was always destined to get an F. Because of these grades his dad would not let him play with his friends after school, he was ordered to stay in his room and do homework. Nicholas was a very depressed twelve year old as he stated, "I hate my life; I wish I was dead!"

Amazingly, Nicholas had just diagnosed his problem. He was not learning to read because he believed he could not, he was bright and could respond orally but had trouble with handwriting and got tense under pressure. My first step was to work on this attitude of failure that he had held on to for the past six years. I told him about Albert Einstein, Nelson Rockefeller, Tom Cruise, to name a few who were dyslexic. Nicholas was very surprised to hear that and certainly did not think those men were dumb. I reassured him that he was not dumb either, but had not been given opportunities to learn the way he could most effectively. Nicholas was a case just like Patrick in Denny Taylor's book, *Learning Denied*, the school system had failed him (Taylor 1991).

As we continued to work together, I asked Nicholas if he had ever used a computer? "No," was his reply. I introduced Nicholas to the talking computer with KidTalk software. (Casey 1983) He immediately began to compose his life story. Then he was able to read it and print it out. "You are a very bright boy Nicholas, you just needed a more sophisticated writing tool to help you put all your great ideas down on

paper," I told him. It took more than a talking computer, it took a teacher who understood Nick's particular learning strengths and needs and cared enough to encourage him and help him learn in other ways. But it was definitely a breakthrough and turned Nick on to learning once more.

David was a student in the first grade at one of the Simi Star Project schools, I entered his classroom and saw a 10 page story on the bulletin board, I began to read it. David walked up to me and said, "Do you like that story? It's mine?" Follow me to the computer and I will show you more, it is twenty-six pages long now. I followed him with great interest. He took me to a computer, put head phones on my head and proceeded to play the story for me. I listened in awe as the computer began to read his long story of the Dinosaurs' lives, George Washington's life and his grandma's life.

At recess I could hardly wait to go to the teachers' lounge and speak with his teacher. "Mary," I said to her, "David must be a gifted first grader, his story is outstanding, well above what you would expect from an average first grader." She laughed, "Oh no, she said. You should have seen him at the beginning of the year, he was identified A.D.D. and he couldn't hold a pencil or write and he hated school. Now he doesn't want to go out even for recess when he is in the middle of one of his great stories!" I drove home thinking about a technology that had made a student write in a gifted manner even though he had been labeled a poor writer. A technology that compelled a student, who had been labeled attention deficit disorder, to sit for long periods of time thinking, creating, imagining a twenty-six page story. If he could sit that long writing something of interest to him then sitting still was not the problem, having

something worthwhile to attend to seemed more probable. Something is wrong with the labels, I concluded, the students are fine when given the right tools and environment.

Thomas Armstrong, psychologist, teacher, and consultant has years of experience working with children who have attention and behavior problems. He has the belief that these children are at core fully intact, whole, and healthy human beings...that the best way to help them is to provide the kinds of nurturing, stimulating, and encouraging inventions that are good for all kids.(Armstrong 1995) The computer provides the motivation, stimulation and control in the learning environment. All you need to provide is nurturing and encouragement. I worked with ESL, LEP, Down's syndrome students and the computer was equally empowering, an essential learning tool for them. For Gifted students the computer finally freed them from the boredom of classroom work too easy for them and allowed them to create, imagine and write far beyond anyone's expectations.

In summary, the time has come for us to integrate computers as tools in every classroom. Six networked computers worked well in a classroom of twenty-five students, but one per student as envisioned by Seymour Papert (Papert 1993) should certainly be our goal. We must help teachers recognize the power of the computer as a problem solving tool when used by the learner to construct his own literacy. They are as empowering to five year olds as they are to you once you discover you can use Powerpoint to produce a presentation that will impress your staff and parents. They need to be in every classroom, in every school. Money must be set aside for training to help teachers understand that this is a new paradigm, one in which students create stories directly from their mind into the computer and then have the control and power for easy editing. Untrained teachers think stories must be written out in pencil first, then corrected

and then laboriously typed by the child into the word processor. There is no surer way to make children dislike technology than to use the approaches designed for the pencil. It is as if you had to wash your clothes on the washboard by hand before you put them in your washer! Wouldn't you hate that.

John Henry Martin, educator and creator of Writing to Read summed up the benefits of computer use for literacy for all students, he said," "The computer can give the learner the world's most beautiful feeling, the Greek "Eureka:" I got it, I know it, I can see it, I can understand it! That's a transforming feeling; to be awakened from dormancy, from sadness to strength, to dignity. I can write, I can read! Do this for your students today!

A 21st Century technology equipped classroom, trained teachers, a risk-free learning environment and you are ready; when the three and four year olds doing Broderbund's Living Books on their home computers today come to your classroom door next year and ask, "Where is the CD-ROM?" "When do I learn to read and write?" Your teachers will say, right over here! right now!

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- TeacherNet: Supporting teachers on-line
- Reading Acquisition: K-8, RICA, technology integration

Conducted 14 years of research on early literacy and how technology can make early reading and writing successful.
Turning Language Experience into Language Processing!

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